

CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claims 1-82 (canceled)

83. (new) An isolated transcript variant of a 121P1F1 gene (SEQ ID NO: 1), wherein the transcript variant is transcribed from the 121P1F1 gene and encodes a protein comprising at least one amino acid substitution, addition or deletion relative to SEQ ID NO: 2.

84. (new) The transcript variant of claim 83, wherein the variant comprises a deletion relative to SEQ ID NO: 2.

85. (new) The transcript variant of claim 84, wherein the variant encodes a protein selected from the group consisting of SEQ ID NO: 5, SEQ ID NO: 9, and SEQ ID NO: 11.

86. (new) The transcript variant of claim 83, wherein the variant encodes a protein selected from the group consisting of SEQ ID NO: 7 and SEQ ID NO: 13.

87. (new) The transcript variant of claim 83, wherein the variant is selected from the group consisting of SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10 and SEQ ID NO:12.

88. (new) An isolated protein variant of 121P1F1 comprising an amino acid sequence selected from the group consisting SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, and SEQ ID NO: 11.

89. (new) An isolated antibody or fragment thereof that specifically binds to a protein variant of claim 88.

90. (new) The antibody or fragment thereof of claim 89, which is monoclonal.
91. (new) The antibody or fragment thereof of claim 89, wherein the antibody or fragment thereof is a human antibody, a humanized antibody or a chimeric antibody.
92. (new) The antibody or antibody fragment thereof of claim 89, wherein the antibody or fragment thereof is labeled with an agent.
93. (new) A hybridoma that produces the antibody of claim 90.
94. (new) A recombinant expression vector that comprising a nucleotide sequence of claim 5.
95. (new) The recombinant expression vector of claim 94, wherein the expression vector is a mammalian expression vector.
96. (new) A host cell comprising the expression vector of claim 94.
97. (new) The host cell of claim 96, wherein the cell is a prokaryotic cell.
98. (new) The host cell of claim 96, wherein the cell is a eucaryotic cell.
99. (new) A viral vector comprising a nucleotide sequence which encodes the amino acid sequence of SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 11, wherein the nucleotide sequence is operably linked to promoter for expression of SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 11 in a mammalian cell.
100. (new) The viral vector of claim 99, where in the nucleotide sequence is selected from the group consisting of SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10 and SEQ ID NO:12.

101. (new) The viral vector of claim 99, further comprising a pharmaceutically acceptable carrier.

102. (new) The viral vector of claim 99, further comprising a second nucleic acid encoding an additional polypeptide which enhances the immune response to SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 11.

103. (new) The viral vector of claim 99, wherein the isolated nucleic acid molecule which encodes SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 11 is SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10 or SEQ ID NO:12, respectively.

104. (new) The viral vector of claim 99, wherein the promoter is a viral promoter.

105. (new) The viral vector of claim 104, wherein the viral promoter is cytomegalovirus promoter (CMV).

106. (new) A method of generating a mammalian immune response directed to a protein, comprising:

exposing cells of the mammal's immune system to an immunogenic portion of SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 11.

107. (new) The method of claim 106, wherein the generated immune response comprises an activation of a T cell or a B cell in the mammal.

108. (new) The method of claim 107, wherein the immune response comprises an activated B cell that generates antibodies that bind specifically to the SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 11.

109. (new) The method of claim 108, wherein the immune response comprises activation of a cytotoxic T cell (CTL), whereby the activated CTL kills an autologous cell that expresses the amino acid sequence of SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 11.

110. (new) The method of claim 108, wherein the immune response comprises activation of a helper T cell (HTL), whereby the activated HTL secretes cytokines that facilitate the cytotoxic activity of a cytotoxic T cell (CTL) or the antibody producing activity of a B cell.